CLAIMS

1. A system for assisting the regeneration of depollution
means (1) associated with oxidation catalyst-forming
means (2), and integrated in an exhaust line (3) of a
5   motor vehicle diesel engine (4), in which the engine is
associated with common rail feed means (7) for injecting
fuel into the cylinders of the engine, including at least
one post-injection, and adapted, at constant torque, to
implement at least two regeneration strategies (10, 11),
10   at a first level and at a second level, depending on
different engine operation control parameters in order to
obtain different temperature levels in the exhaust line,
the temperature level corresponding to the second level
strategy (10) being higher than that corresponding to the
15   first level strategy (11), the system being characterized
in that it includes acquisition means (9) for acquiring
the exothermic temperature level of the catalyst-forming
means (2), comparator means (8) for comparing this
exothermic temperature level with a safety threshold
20   (safe_th) for the catalyst-forming means (2), so that in
the event of said threshold value being exceeded while
applying the second level strategy (10), the feed means
(7) are controlled to regulate progressively at least one
of the engine operation control parameters in such a
25   manner as to reduce the exothermic temperature level of
the catalyst-forming means (2), and if this level does
not drop below the threshold value at the end of a first
predetermined time period, to control the feed means (7)
to switch over to the first level strategy (11), and if
30   said exothermic temperature level of the catalyst-forming
means still does not drop below the safety threshold
value at the end of a second period of time, to stop the
regeneration strategy;
        in that the feed means (7) are adapted to implement
35   two successive post-injections;
        in that during regulation, the feed means (7) are
adapted to reduce progressively the flow rate of fuel in

the second post-injection, and in that the feed means (7) are adapted to reduce the flow rate of the second post-injection by using a correction factor lying in the range 0 to 1 and determined on the basis of the difference between the exothermic temperature level (NT) and the safety threshold value (safe_th).

2. A system according to claim 1, characterized in that the correction factor is determined by a PI type regulator (13) having non-linear gain.

3. A system according to any preceding claim, characterized in that the acquisition means (9) for acquiring the exothermic temperature comprise two temperature sensors (9a, 9b), one placed upstream and the other placed downstream from the catalyst-forming means (2).

4. A system according to any preceding claim, characterized in that the engine (4) is a diesel engine associated with a turbocharger (5, 6).

5. A system according to any preceding claim, characterized in that the value of the safety threshold (safe_th) is calibratable.

6. A system according to any preceding claim, characterized in that the depollution means (1) comprise a particle filter.

7. A system according to any preceding claim, characterized in that the depollution means (1) comprise a NOx trap.

8. A system according to any preceding claim, characterized in that the depollution means (1) comprise a SOx trap.

9. A system according to any preceding claim, characterized in that the depollution means (1) comprise an oxidation catalyst.

10. A system according to any preceding claim, characterized in that the fuel includes an additive for being deposited together with the particles of which it is mixed on the depollution means (1) in order to facilitate regeneration thereof.

11. A system according to any one of claims 1 to 9, characterized in that the fuel includes an additive forming a NOx trap.